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SYRACUSE UNIVERSITY.

College of Liberal Arts.

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UNIVERSITY OF ILLINOIS

POST-GRADUATE

COURSES OF STUDY.

1893.

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SYRACUSE, N. Y. :
E. M. GROVER, PRINTER AND BINDER.

Examiners.

JOHN R. FRENCH, LL. D., DEAN, - - - *Mathematics.*

REV. W. P. CODDINGTON, D. D.,
Philosophy, Evidences of Christianity.

FRANK SMALLEY, A. M., PH. D., - - - *Latin.*

EUGENE HAANEL, PH. D., (BRESL.) F. R. S. C.,
Physics, Chemistry.

WILLIAM H. MACE, A. M., - - - - - *History.*

REV. CHARLES W. HARGITT, PH D., *Botany. Zoology.*

REV. JOHN HEDDÆUS, PH. D., - - - *French, German.*

REV. WILLIAM G. WARD, A. M., - - - *English Literature*

EDGAR A. EMENS, A. M , - - - - *Greek*

SYRACUSE UNIVERSITY.

COLLEGE OF LIBERAL ARTS.

COURSES OF POST-GRADUATE STUDY.

To promote systematic and thorough culture, the Master's degree or the degree of Doctor of Philosophy will be conferred upon any regular graduate of a reputable college possessing the degree of Bachelor of Arts, of Philosophy, or of Science who shall comply with the following requirements:

Candidates will furnish documentary evidence, by diploma or otherwise, that the required Bachelor's degree has been received, and before entering upon their studies will matriculate by payment of the matriculation fee, and by furnishing to the Dean of the Faculty, Prof. John R. French, the following items: (1) Name in full, (2) residence, (3) age, (4) present occupation, (5) date of graduation, (6) from what college graduated, (7) degree received, (8) other degrees received, if any, with date and name of institution conferring them, (9) under-graduate course pursued (classical or otherwise), (10) post-graduate course proposed. Blanks for this purpose will be furnished on application.

For the Master's degree a two years' course of non-resident study will be accepted. Any two of the groups designated in the following courses of study by the roman numerals, I, II, III, selected from the same department, will, unless otherwise indicated be regarded as a complete course, and on passing a satisfactory examination thereon the candidate will be recommended for the Master's degree.

He will appear at the University for examination, which may be upon one, or both entire groups at one time, as may be desired. Four weeks prior to the final examination the candidate will, unless otherwise noted in his course, forward for deposit in the library, a thesis in plain script, of not less than four thousand words, on some subject previously approved by the examiner, and connected with the course of study pursued. This must be accompanied by six copies in print, by typewriter or otherwise, except symbols and diagrams, which may be inserted with a pen. This thesis the candidate will be expected to maintain at his final examination. These examinations will occur at such times as shall be mutually convenient to be determined by correspondence.

For obvious reasons the faculty have deemed it wise that all candidates on the continent of North America be required to take these examinations in Syracuse. All requests for question papers to be sent elsewhere will be declined. The examinations are somewhat rigorous, occupying from four to six days upon each group.

Candidates are requested to give to the Dean of the faculty three weeks' notice of the subjects upon which examinations may be desired.

Graduate students will also be recommended for the Master's degree who shall have completed an advanced course of study of one year in residence, having passed a satisfactory examination, on presentation of a thesis which shall give evidence of ability to prosecute independent investigation.

All future matriculants for the degree of Doctor of Philosophy will be required to prosecute an advanced course of study in residence for a period of two years. They will be recommended for this degree on passing satisfactory examinations and submitting such theses as may be prescribed, showing undoubted ability in investigation.

Candidates not reporting for three years after matriculation, will be deemed to have abandoned the course, and will be dropped from the list.

Information as to matters of detail relating to any particular course, may be obtained by addressing the examiner in the department involved.

In order that candidates may be communicated with, they are requested to notify the Dean of any change of address.

The following fees are required to be prepaid by non-resident students:

Matriculation,	-	-	-	\$ 5.00
Examination for each group,	-	-	-	20.00
Diploma,	-	-	-	5.00

The fees for residents, after matriculation, will depend upon the time devoted to them by the Professors.

MATHEMATICS.

[The entire works named are included.]

I.

1. Plane and Spherical Trigonometry.⁴¹ *Chauvenet.*
2. Analytic Geometry of two and three dimensions.⁴¹
Johnson or Bowser.
3. Analytic Geometry.⁷¹ *Ray's Howison, unabridged.*
4. Differential Calculus.⁴⁴ *Todhunter.*

II.

1. Integral Calculus.⁴⁴ *Todhunter.*
2. Analytic Mechanics.⁴ *Bartlett, unabridged.*
3. Spherical and Practical Astronomy,⁴¹ *Chauvenet.*
Vol. I.

III.

1. Acoustics and Optics.⁴ *Bartlett.*
2. Elements of Quaternions.²⁹ *Hardy.*
3. Theory of Determinants.⁶⁴ *Scott.*
4. Directional Calculus.²⁹ *Hyde.*

NOTE.—The reference numerals indicate the publishers of the books named.
See list at the end.

PHILOSOPHY.

METAPHYSICS.

I.

1. History of Philosophy. (Translated by Hough.)⁴⁴ *Erdmann.*
2. The Stoics, Epicureans, and Sceptics. (Translated by Reichel.)⁴³ *Zeller.*
3. Geschichte der Deutschen Philosophie.⁴³ *Zeller.*
4. Critique of the Pure Reason.³⁰ (Translated by Morris.) *Kant.*
5. Metaphysic. (Translated by Bosanquet.)⁴⁴ *Lotze.*
6. A System of Logic and History of Logical Doctrines.⁴³ (Translated by Lindsay.) *Ueberweg.*

II.

1. German Psychology of To-day.⁶⁷ (Translated by Baldwin.) *Ribot.*
2. Science of Knowledge.³⁰ (Translated by Everett) *Fichte.*
3. The principles of Science.⁴⁴ *Jevons.*
4. British Thought and Thinkers. *Morris.*
5. The Scottish Philosophy.¹¹ *McCosh.*
6. Examination of J. S. Mills' Philosophy.¹¹ *McCosh.*

III.

1. Psychological Theory.³² *Bowne.*
2. The Relations of Mind and Brain.⁴⁴ *Calderwood.*
3. Protoplasm, or Matter and Life. *Beale.*
4. Mikrokosmos. *Lotze.*
5. Elements of Physiological Psychology.⁶⁵ *Ladd.*
6. Final Causes.⁶⁷ *Janet.*

THESIS: (1) Influence of Cartesianism on Modern Thought.

(2) Pessimism in Modern Philosophy.

(3) The Philosophical Increment of the 19th Century.

PHILOSOPHY.

ETHICS.

I.

1. History of Ancient Philosophy. *Butler.*
2. History of Modern Philosophy.⁶⁷ (Translated by Gordy.) *Kuno Fischer.*
3. Socrates and the Socratic Schools.⁴³ (Translated by Reichel.) *Zeller*
4. The Nichomachean Ethics.⁴³ (Translated by Williams.) *Aristotle.*
5. Outlines of the History of Ethics.⁴⁴ *Sidgwick.*
6. The Methods of Ethics.⁴⁴ *Sidgwick.*

II.

1. Christianity and the Greek Philosophy.³² *Cocker.*
2. Prolegomena to Ethics.⁴⁴ *Green.*
3. Critique of the Practical Reason.⁴³ (Translated by Abbott.) *Kant.*
4. Kant's Ethics.³⁰ (Translated by Porter.)
5. Types of Ethical Theory.⁴⁴ *Martineau.*
6. Theory of Morals.⁵⁷ *Janet.*

III.

1. Institutes of Law. *Lorimer.*
2. Modern Utilitarianism.⁴⁴ *Birks.*
3. Modern Physical Fatalism.⁴⁴ *Birks.*
4. Ethics of Theism,⁷⁷ *Leitch.*
5. Social Morality.⁴⁴ *Maurice.*
6. Christianity and Positivism.¹¹ *McCosh.*
7. Conscience.³⁷ *Cook.*

THESIS: (1) Ethical Bearings of Modern Socialism.
 (2) Pessimism in Modern Philosophy.

EVIDENCES OF CHRISTIANITY.

I.

1. Supernatural Origin of Christianity.⁵⁷ *Fisher.*
2. Divine Origin of Christianity as indicated by its Historical Effects.⁵⁴ *Storrs.*
3. Conflict of Christianity with Heathenism.⁵⁷ (Translated by Smyth.) *Uhlhorn.*
4. The Self Revelation of God.⁵⁷ *Harris.*
5. Studies in Theism.⁵¹ *Bowne.*
6. The Theistic Argument as affected by recent theories.³⁷ *Diman.*

II.

1. The Philosophic Basis of Theism.⁵⁷ *Harris.*
2. An Introduction to the Philosophy of Religion.⁴⁴ *Caird.*
3. The Philosophy of Religion.⁵³ (Translated by Stewart.) *Pfleiderer.*
4. Philosophy of the Infinite.⁴⁴ *Calderwood.*
5. Christianity and the Greek Philosophy.³² *Cocker.*
6. Nature and the Supernatural.⁵⁷ *Bushnell.*

III.

1. A History of Christian Doctrine.⁵⁷ *Shedd*
2. The Doctrine of Sacred Scripture.⁵⁷ *Ladd.*
3. Messianic Prophecy.⁵⁷ *Briggs.*
4. Divinity of Our Lord Jesus Christ.²¹ *Liddon.*
5. Modern Doubt and Christian Belief.⁵⁷ *Christlieb.*
6. Science and Religion.⁴⁴ *Calderwood.*

THESIS: (1) Ethical Bearings of Modern Socialism.

(2) Evolution as Related to Christian Morals.

LATIN LANGUAGE AND LITERATURE.

1. Livy.⁴⁴ Book I. *J. R. Seeley.*
2. Remnants of Early Latin.²⁹ *Allen.*
3. Latin Selections.¹ *Smith.* Selections 1-11 and 27-63.
4. History of Roman Literature.⁵⁶ *Cruttwell.* Introduction and Book I.
5. Manual of Mythology.⁵⁶ *Murray.* Pp. 1-308. Or Hand-book of Mythology.⁸¹ *Berens.*
6. History of Rome.⁵⁶ *Mommsen.* Vol. I. Books I. and II. And Lectures on the History of Rome.¹ i to xi, inclusive. *Niebuhr.* Vol. I.
Read: Ten Great Religions.⁴⁹ *Clarke,* Chap. VIII. Ancient Rome in the Light of Recent Discoveries.⁹⁷ *Lanciani.*
7. Plautus, Miles Gloriosus.⁴⁴ *Tyrrell.* And Captivi.⁴⁴ *Lindsay.*
8. Terence, Andria, and Adelphœ.²² *Crowell.*
9. Latin Selections. *Smith.* Selections 12-26 and 64-71.
10. History of Roman Literature. *Cruttwell.* Pp. 41-56.
11. Roman Poets of the Republic.⁴⁴ *Sellar.* Chapters I.-IX.
12. History of Rome. *Mommsen.* Vol. II, Book III, and Chap. XIII, of Book IV, in Vol. III. And Lectures on the History of Rome. *Niebuhr.* Vol. II, Lec. lxx.
Read: The Ancient Classical Drama.⁴⁴ *Moulton.* The Sentence-Question in Plautus and Terence. *Morris;* in the American Journal of Philology.⁴⁴ Vol. X, 4, and Vol. XI, 1 and 2.

13. Cicero, *De Oratore*,²² *Crowell*. And *Second Philippic*.⁴⁴ *Mayor*.
14. Tacitus, *Dialogus de Oratoribus*.²² *Stuart*.
15. Quintilian, *Institutiones Oratoriæ*.² *Frieze*. Books X, and XII.
16. Horace, *Ars Poetica*.²² *Chase*.
17. *History of Roman Literature*. *Cruttwell*. Book II.
18. *History of Rome*. *Mommsen*. Vol. III, Book IV, and Chap. XII, of Book V, in Vol. IV.
 Read: *Life of Cicero*.⁵⁷ *Forsyth*.
 Old Roman World.⁵⁶ *Lord*.

II.

1. Horace, *Odes and Epistles*.²² *Chase*.
2. Ovid, *Metamorphoses*.¹ *Haupt*.
3. *Selections from the Latin Poets*.²⁹ *Crowell*.
4. *Prosody, Versification; Composition of an Ode or Poem in Latin*.
5. *Roman Poets of the Augustan Age*.⁴⁴ *Sellar*. And *Roman Poets of the Republic*. *Sellar*. Chap. XV.
6. *History of Roman Literature*. *Cruttwell*. Pp. 241-318, and 359-371.
7. *History of Rome* *Mommsen*. Vol. IV, Book V.
 Read: *Rhythmic and Metric of the Classical Languages*.²⁹ *Schmidt*. (Trans. by White.)
 Lectures on the History of Rome. *Niebuhr*. Vol. III. Lectures cvi, and cvii.
 Roman Literature in Relation to Roman Art.⁴¹ *Burn*.
 The Phasalus of Catullus. *Smith*; in *Harvard studies in class, Philology*,³⁹ Vol. III.

8. Horace, Epodes and Satires.²² *Chase.*
9. Juvenal.²² *Chase.*
10. Persius. *Conington*,⁴⁴ or *Gildersleeve*.³²
11. Martial, Select Epigrams.⁴⁴ *Stephenson.*
12. History of Roman Literature. *Cruttwell.* Book III.
13. History of the Romans Under the Empire.² *Merivale.* Vols. I and II.
Read: Manual of Latin Prosody.⁶⁹ *Ramsay.*
Essay on the Roman Satire.⁴⁴ *Nettleship.*
14. Tacitus, Annales.²⁹ *Allen.* Books I–VI.
15. Cæsar, De Bello Civili.⁸⁶ *Perrin.*
16. Suetonius, De Vita Cæsarum.³⁶ *Peck.* Books I. and II.
17. History of the Romans Under the Empire. *Merivale.* Vols. III and IV.
18. History of Latin Literature.³⁶ *Simcox.* Vol. I, Pp. 208–224; Vol. II, Pp. 179–232.
Read: Cæsar: A Sketch.⁵⁷ *Froude.*
Cæsar: Great Captains' Series. *Dodge.*
History of the City of Rome.⁸⁷ *Dyer.*
Gerunds and Gerundives in the Annals of Tacitus. *Platner.* Am. Jour. Phil. Vol. IX, 4.

III.

1. Cicero, Selected Letters.⁴⁴ *Pritchard and Bernhard*; or *Montague*.²²
2. Seneca, Selected Letters; also Letters to Saint Paul.³² *Hurst and Whiting.*
3. Pliny, Letters.¹ *Holbrooke.*
4. Ovid, Letters of Heroines.⁴⁴ *Shuckburgh.*

5. History of the Romans under the Empire. *Merivale*. Vols. IV–VI.
6. Gallus. *Becker*. Scene III. Excursuses i, ii, iii, iv.
 Read: The Life of the Romans.² *Guhl and Koner*.
 Seneca and Saint Paul.⁴⁴ *Aubertin*.
 Fauces of the Roman House. *Greenough*; in Harvard Studies in Classical Philology.²⁹ Vol. I.
 Gerunds and Gerundives in Pliny's Letters. *Platner*. Am. Jour. Phil. Vol. IX, 2.
7. Lucretius, De Rerum Natura.¹ *Munro*.
8. Cicero, De Natura Deorum.²⁹ *Stickney*.
9. Seneca, Moral Essays.³² *Hurst and Whiting*.
10. Roman Poets of the Republic.⁴⁴ *Sellar*. Chapters X–XIV.
11. Sketch of Ancient Philosophy.⁴⁴ *Mayor*.
 Read: The Stoics, Epicureans, and Sceptics.⁴³ *Zeller*.
 History of Ancient and Medieval Philosophy.⁵⁶ *Ueberweg*. (Trans. by Morris.)
 Sections 52–61.
 Oriental and Linguistic Studies.⁵⁷ 2d Series. The East and the West. Religion and Mythology. *Whitney*.
12. Ovid, Fasti. *Hallam*⁴¹ or *Paley*.¹
13. Propertius, Select Elegies.⁴⁴ *Postgate*.
14. Tertullian, Select Works.³² *March*.
15. Latin Hymns.³² *March*.
 Read: Holy Roman Empire.⁴⁴ *Bryce*.
 Sacred Latin Poetry.⁴⁴ *Trench*.
 Catacombs of Rome.⁵¹ *Withrow*.
 Pagan and Christian Rome.³⁷ *Lanciani*.

Two Theses are required. The subject for the first: The causes of Rome's National and Literary Decline. This must consist of not less than 4,000 words. Choice of the following for the second thesis; (a) The Mythical Element in Roman Literature; (b) Roman Art; (c) Indebtedness of the Roman Civilization and Literature to the Greek; (d) Rome's Contribution to Modern Civilization.

REFERENCE WORKS.

New Classical Dictionary.¹ Sixteenth Edition. *Smith*.
 Dictionary of Roman and Greek Antiquities.¹ *Rich*.
 Manual of Roman Antiquities.¹ Eleventh Edition.

Ramsay.

Hand-book of Archæology¹. Second Edition. *Westropp*.

Archæology of Rome. Second Edition. *Parker*.

Rome and the Campagna.¹ *Burn*.

History of Roman Literature. Fifth Edition. *Teuffel*.

PHYSICS.

Students pursuing the Post-Graduate course in Physics are expected to have a reading knowledge of German, and are required to pass a preliminary examination in the Differential and Integral Calculus.

I.

1. Elementare Mechanik as Einleitung in das Studium der Theoretischen Physik. *Dr. Woldemar Voigt*, Leipzig, 1889.
2. Theory of Heat. *Clerk Maxwell*.
3. Lessons in Elementary Practical Physics. *B. Stewart and W. W. Haldane Gee*. Vol. I. General Physical Processes.
4. Die Kinetische Theorie der Gase. *Dr. O. E. Meyer*.

II.

1. Physikalische Krystallography. *P. Groth*, Leipzig, 1885. Erste Abtheilung, pp. 3-186.
2. Physical Treatise on Electricity and Magnetism. *J. E. H. Gordon*, London, 1880. Vols. I. and II.
3. Lessons in Elementary Practical Physics. *Stewart & Gee*. Vol. III. Optics and Sound.
4. Units and Physical Constants. *Professor Everett*.

III.

1. Electricity and Magnetism. *Mascart & Joubert*. (English translation.) London, 1883. Vol. I. General Theory.

2 Lessons in Elementary Practical Physics. *Stewart & Gee*. Vol. II. Electricity and Magnetism.

The examinations are part experimental, part theoretical. The requisite knowledge and skill required to pass the examination in experimental Physics may be acquired in the Physical laboratory of this or any other University affording the necessary apparatus and facilities for experimental work.

A thesis embodying the results of some original investigation must be presented to the examiner before the final examination is taken. The data for such thesis must be obtained by work in the laboratory of this University.

CHEMISTRY.

I.

1. Inorganic Chemistry. Advanced Course.⁴⁴ *Remsen.*
2. Laboratory work:

Preparation and demonstration of the properties of the following elements and compounds: Oxygen, Hydrogen, Ozone, Hydrogen Dioxide, Chlorine, Hydrochloric Acid, Chloric Acid, Perchloric Acid, Hydrobromic Acid, Hydriodic Acid, Iodic Acid, Hydrofluoric Acid, Amorphous Sulphur, Hydrogen Sulphide, Sulphuric Acid, Sulphur Trioxide, Sulphur Dioxide, Nitrogen, Ammonia, Nitric Acid, Nitrous Acid, Nitrous Oxide, Nitric Oxide, Nitrogen Tetroxide, Nitrogen Peroxide, Phosphine, Arsine, Phosphorous Trichloride, Phosphorous Pentachloride, Phosphoric Acid, Marsh Gas, Ethylene, Carbon Dioxide, Carbon Monoxide, Silicon, Silicon Tetrafluoride.

3. Qualitative Analysis:
 - a.* Wet method.
 - b.* Dry method. Blowpipe Analysis.⁴⁴ *Landauer.*

II.

1. Compounds of Carbon.⁴⁴ *Remsen.*
2. Laboratory work: Practical Organic Chemistry.⁴⁴ *Julius B. Cohen.*
3. Quantitative Analysis. (Gravimetric.) *Thorpe.*

III.

1. Die modernen Theorien der Chemie. *Dr. Lothar Meyer.*
 2. Volumetric Analysis.⁴⁴ *Fleischer.* Translation by *Muir.*
 3. Organic Analysis. (Quantitative Analysis.) *Fresenius.*
-

The examinations are part experimental, part theoretical. The requisite experimental knowledge to pass the examinations may be acquired in the laboratory of this or any other University affording the necessary apparatus and facilities for exact work.

A thesis embodying the results of some original investigation must be presented to the examiner before the final examination is taken. The data for such thesis must be obtained by work in the laboratory of this University.

HISTORY.

Any two related groups may be taken.

After consultation, some of the works of minor importance may be omitted; the aim is not to read many authors, but to study a few masters.

A thesis embodying the results of investigation carried on with original material must be presented before the examination for a Master's degree.

GENERAL HISTORY.

I.

1. History of Rome. *Ihne.*
2. History of Rome. *Mommsen.*
3. Romans Under the Empire. *Merivale.*
4. Decline and Fall. *Gibbon.*
5. History of the Christian Church. *Hase.*
6. Latin Christianity. *Milman.*
7. History of Greece.⁴⁴ *Finlay.*
8. Fall of Rome.² *Sheppard.*
9. Holy Roman Empire. *Bryce.*
10. Gregory VII. *Villemain.*
11. History of Saracens.⁴⁴ *Freeman.*
12. Ottoman Turks. *Creasy.*
13. Middle Ages. *Hallam.*
14. History of Philosophy. (Mediæval.) *Ueberweg.*

II.

1. Italian Renaissance.⁴⁴ *Buckhardt.*
2. Lorenzo de Medicis. *Reumont.*
3. Charles V. *Robertson.*
4. Period of the Reformation.² *Haüsser.*
5. History of the Popes. *Von Ranke.*
6. Dutch Republic. *Motley.*
7. History of France. *Deumy.*
8. History of England. *Green.*
9. History of Prussia. *Tuttle.*
10. History of Russia. *Rambaud.*
11. History of the United States. *Bancroft.*
12. History of the United States. *Schouler.*
13. Modern Europe. *Fyffe.*
14. German Empire. *Von Sybel.*
15. History of the Origins of Contemporary France.³⁶
Taine. 5 Vols.

CONSTITUTIONAL HISTORY.

I.

1. Political Science. *Woolsey.*
2. Politics.⁴¹ *Aristotle.*
3. Physics and Politics. *Bagehot.*
4. Roman Law.² *Hadley.*
5. Ancient Law. *Maine.*
6. Middle Ages. *Hallam.*
7. History of Latin Christianity. *Milman.*
8. Holy Roman Empire.⁴¹ *Bryce.*
9. Civil Liberty. *Lieber.*
10. The Swiss Confederation.⁴⁴ *Adams and Cuning-*
ham.
11. { Ancient Régime.³⁶
 { Modern Régime. *Taine.*
12. Founding of the German Empire. *Von Sybel.*

II.

1. Constitutional History of England. *Stubbs.*
2. Constitutional History of England. *Hallam.*
3. Constitutional History of England. *May.*
4. English Constitution.² *Bagehot.*
5. English Constitution. *Anson.*
6. The Government of England. *Hearn.*
7. Representative Government. *Mill.*
8. English Colonies in America.³⁶ *Doyle.*
9. Debates.⁴¹ *Elliot.*
10. Democracy in America. *De Tocqueville.*
11. American Commonwealth.⁴⁴ *Bryce.*
12. American Constitution. *Bancroft.*
13. Constitutional History of the United States.⁸⁹
Von Holst.
14. Constitutional History of the United States.
Curtis.

AMERICAN HISTORY.

I.

For those who prefer it the Narrative and Critical History of America, edited by Justin Winsor, will be taken as the basis of examination. Collateral reading must in that case be pursued under the direction of the Professor of History.

II.

Or the following course may be adopted:

1. History of the United States.² *Bancroft.*
2. Spanish Conquest of America. *Help.*

3. The Puritans in Holland and in America. *Campbell.*
4. Rise of the Republic.⁴² *Frothingham.*
5. Critical Period of American History.³⁷ *Fiske.*
6. History of the United States. *Hildreth.*
7. History of the United States. *Schouler.*
8. Debates.⁴¹ *Elliot.*
9. Constitutional History of the United States. *Von Holst.*
10. Congressional Government. *Woodrow Wilson.*
11. American Commonwealth. *Bryce.*
12. Abraham Lincoln. *Hay and Nicolay.*
13. War Between the States. *A. H. Stephens.*

BOTANY.*

I.

MORPHOLOGY OF PHÆNOGAMS.

1. Detailed work in Plant Morphology as indicated in the following outlines for practical study :
 - (a) Das Botanische Practicum.²⁷ *Strasburger*.
 - (b) Practical Botany.⁴⁴ *Bower*.
 - (c) Plant Dissection.⁴⁴ *Arthur, Barnes and Coulter*.
 - (d) Botanical Micro-Chemistry.¹³ *Trelease*.
 - (e) Microscope in Botany.¹³ *Behrens*.

General Reference works essential.

 - (a) Outlines of Special Morphology.⁴⁴ *Goebel*.
 - (b) Comparative Anatomy of Phanerogams and Ferns.⁴⁴ *De Bary*.
 - (c) Text-book of Botany.³⁶ *Bessey*.
2. Special Morphology of assigned group, embodying in a *thesis* the results of such investigations, to be accompanied with such drawings and mounted microscopical preparations as the subject may necessitate.†

II.

CRYPTOGAMIC BOTANY.

1. General study of leading types as outlined in *Bennett and Muray's* Cryptogamic Botany.⁴³

* Candidates applying for this course must have a reading knowledge of German, and must have mastered the general principles of Vegetable Morphology as outlined in *Gray's* Structural Botany.

† The references given are general. Other literature bearing upon special subjects will be named after the selection is made.

2. Special study of assigned groups. General reference works necessary :
 - (a) Outlines of Classification and Special Morphology.⁴⁴ *Goebel*.
 - (b) Morphology and Biology of Fungi. Myætozor and Bacteria.⁴⁴ *DeBary*.
3. Thesis embodying results of special work involved in the course.

III.

PHYSIOLOGICAL BOTANY.

1. Assigned work in general vegetable physiology.
Reference works necessary :
 - (a) Physiological Botany.³⁸ *Goodale*.
 - (b) Vorlesungen über Pflanzen-Physiologie.²⁶
(Or English translation.⁴⁴) *Sachs*.
 - (c) Lectures on the Physiology of Plants.⁴⁴
Vines.
2. Special problems in plant physiology to be assigned upon progress of the course.
3. FINAL THESIS embodying results of original investigations carried on in the laboratory of this University, or under the personal direction or supervision of the professor in charge.

ZOOLOGY.*

I.

MORPHOLOGY.

1. Comparative Work in the Morphology of assigned groups.

The following general reference works will be necessary:†

- (a) Text-book of Zoology.⁴⁴ *Claus and Sedgwick.*
- (b) Comparative Anatomy.⁴⁴ *Gegenbour.*
- (c) Lehrbuch der Vergleichenden Anatomie. *Wiedersheim.* (Or English translation.)⁴⁴
- (d) Lehrbuch der Vergleichenden Anatomie. *Lang.* (Or English translation.)⁴⁴
- (e) Forms of Animal Life.⁴⁴ *Rolleston and Jackson.*
- (f) Osteology of the Mammalia.⁴⁴ *Flower.*
- (g) Morphology of the Skull.⁴⁴ *Parker and Bettang.*
- (h) Various guides to dissection, etc.

2. Thesis embodying results of an investigation growing out of the foregoing work. Special references to additional literature will be given in connection with the subject selected.

* Candidates for this course must have a reading knowledge of German, and must have had sufficient preliminary work in General Zoology to render clear the fundamental principles of Morphology.

† The works of references named are general, and only intended to afford suggestive guidance in the course. Other literature on special lines will be indicated in each case upon the selection of the subject.

II.

EMBRYOLOGY.

1. General principles involving methods and practical demonstrations.
2. Special work upon the life histories of assigned groups.

General Reference works essential:

- (a) Methods in Embryology.¹³ *Whitman.*
- (b) Elements of Embryology.⁴⁴ *Foster and Balfour.*
- (c) Comparative Embryology.⁴⁴ *Balfour.*
- (d) Comparative Embryology.⁸⁴ *Haddon.*
- (e) Developmental History of Invertebrates.⁴⁴ *Drs. Korschelt and Heider.*
- (f) Developmental History of Vertebrates.⁴⁴ *Dr. O. Hertwig.*

III.

FINAL THESIS embodying results of original investigation upon data obtained or elaborated in the laboratory of this University, or under the personal direction of the professor in charge.

FRENCH LANGUAGE AND LITERATURE.

I.

1. La Prononciation Française. *M. A. LeSaint*. Publ. Hermann Gesenius, Halle.
2. Grammaire Historique de la Langue Française. *A. Brachet*. Publ. I. Hetzel & Cie., Paris.
3. Grammaire Historique de la Langue Française. *Brunot*. Publ. G. Masson, Paris.
4. Histoire de la Langue Française. *E. Littré*. Publ. Perrin et Cie., Paris.
5. Grammaire des Grammaires corrigée par F. Delellée. *Girault-Duvivier*. Publ. A. Cotelle, Paris.
6. A dissertation of not less than 2,000 words on any subject connected with this course.

II.

1. Molière's Works.
2. Racine's “
3. Corneille's “
4. Bossuet's Oraisons Funèbres.
5. Pascal's Pensées, Lettres Provinciales.
6. La Rochefoucauld's Maximes.
Montesquieu's L'Esprit des Loix.
7. Fénelon's Télémaque.
La Fontaine Fables.
8. Chateaubriand Le Génie du Christianisme.
9. Victor Hugo's Les Misérables.
A. Dumas' Les Trois Mousquetaires.
10. Scribe: 3 plays.
Sardou: 3 plays.
11. A dissertation of not less than 2,000 words upon any of the above named writers, or on any one of their works.

GERMAN LANGUAGE AND LITERATURE.

I.

1. A Grammar of the German Language. *H. C. G. Brandt*. Publ. C. T. Putnam's Sons, New York.
2. Deutsche Grammatik *Heyse*. Publ. Hahn'sche, Buchhandlung, Hanover.
3. Deutsche Grammatik. *K. J. Becker*. Publ. I. C. Hermann, Frankfurt-am-Main.
4. Philos.—Historische Grammatik der Deutschen Sprache. *R. Westphahl*. Publ. Mauke, Jena.
5. Die Deutsche Sprache. *A. Schleicher*. Publ. J. G. Cotta, Stuttgart.
6. A dissertation of not less than 2,000 words upon any subject connected with this course.

II.

1. Das Nibelungenlied (any modern version.)
2. Goethe Dramatical Works and Prose Fiction.
3. Lessing's Works.
4. Schiller's Works.
5. Heine's Works.
6. Ebers' Der Kaiser. Riehl's Kulturgeschichtliche Novellen.
7. Paul Heyse's Novellen.
8. Moser; three plays. Benedix; three plays.
9. Freytag's Soll und Haben. Auerbach's Dorfgeschichten.
10. Spielhagen's Hammer and Amboss.
11. A dissertation of not less than 2,000 words upon one of the above named writers or on any one of their works.

ENGLISH LITERATURE.

1. History of English Literature.³⁵ (Books I. and II.) *Taine.*
2. Early English Literature.⁵³ *Washburn.*
3. Chaucer's Canterbury Tales.
4. Morley's Chaucer.³²
5. Best Elizabethan Plays.²⁹ *Thayer.*
6. Lectures on the English Language.⁵⁵ *Marsh.*
7. Spenser's Faërie Queene.⁴⁴ *Kitchin.*
8. Morley's Spenser.³²
9. An essay of 2,000 to 4,000 words on English Literature to the close of the Elizabethan period, followed by an oral examination on the general subject.

II.

1. History of English Literature.³⁵ (Book III.) *Taine.*
2. English of Shakespeare.²⁹ *Craik.*
3. Critical Study of any twelve plays of Shakespeare, including Hamlet, King Lear, Macbeth, and Mid-Summer Night's Dream.
4. Reliques of Ancient Poetry.⁵² *Percy.*
5. Milton's Paradise Lost.
6. Six Chief Lives from Johnson's Lives of the Poets.⁴⁴
7. Dramatic Literature.⁷⁰ *Schlegel.*
8. An essay of 2,000 to 4,000 words on English and American Novelists and their works, followed by an oral examination on the subject.

III.

1. History of English Literature.³⁵ (Book IV.) *Taine*.
2. Pope's Essays, On Criticism and On Man.
3. Carlyle's Essays on Burns and Voltaire.
4. Tennyson's Idyls of the King and In Memoriam,
5. Poetry of Tennyson.⁵⁵ *Van Dyke*.
6. Seven Lamps of Architecture.⁷⁰ *Ruskin*.
7. English Prose.²⁹ *Garnett*.
8. Landmarks of English Literature.² *Nicholl*.
9. Essay of 3,000 to 5,000 words on American Literature, embracing history, poetry, essays, novels, and magazine literature preparatory to an oral examination on the whole subject.

GREEK LANGUAGE AND LITERATURE.

I.

1. History of Classical Greek Literature.⁴⁴ Vol. I. *Mahaffy.*
2. The Life of the Greeks and Romans.² *Guhl & Koner.*
3. Schliemann's Excavations.⁴⁴ *Schuchhardt.*
4. Problems of the Homeric Poems.⁴⁴ *Geddes.*
5. Excursions in Greece.⁶⁹ *Diehl.*
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8. Homer's Iliad.⁴⁴ Books XVI–XXIV. *Leaf.*
9. Homer's Odyssey.⁴⁴ Books XXI–XXIV. *Hamilton.*

II.

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4. Theology of the Greek Poets.²⁰ *Tyler.*
5. Future Life as Represented by the Greek Tragedians.²⁹ *The Classical Review.* Vol. IV, pp. 81–95.
6. Rhythmic and Metric of the Classical Languages.²⁹ *Schmidt.*
7. Æschylus, { Agamemnon.⁴⁴ *Sidgwick.*
 { Seven against Thebes.²⁹ *Flagg.*
8. Sophocles, Œdipus at Colonus.⁴⁴ *Jebb.*
9. Euripides, Iphigenia.²⁹ *Flagg.*
10. Aristophanes, { Clouds.⁴³ *Green.*
 { Knights.⁴⁴ *Sidgwick.*

III.

1. History of Classical Greek Literature.⁴⁴ Vol. II.
Mahaffy.
2. The Attic Orators from Antiphon to Isæus.⁴⁴ 2 Vols.
Jebb.
3. Curtin's History of Greece. Vol. V., Chapters
3 and 4.
4. Thucydides.²⁹ Book I. *Morris.*
5. Plato. { Gorgias.²⁹ *Lodge.*
 { Republic.⁴⁴ Books I.-IV. *Warren.*
6. Selections from the Attic Orators.⁴⁴ *Jebb.*
7. Demosthenes on the Crown.⁴⁴ *Simcox.*

A thesis embodying research must be presented before the final examination.

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